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15 IN THE UNITED STATES DISTRICT COURT
16 FOR THE NORTHERN DISTRICT OF CALIFORNIA

17 UNITED STATES OF AMERICA,
18
19 Plaintiff,
20 v.
21 PACIFIC GAS AND ELECTRIC
22 COMPANY,
23 Defendant.
24
25
26
27
28

No. 14-00175 WHA

**SUBMISSION OF ATTORNEYS PITRE
AND CAMPORA IN RESPONSE TO ORDER
DATED JANUARY 30, 2019;
DECLARATIONS OF ATTORNEYS
FRANK PITRE, STEVE CAMPORA AND
DARIO DE GHETALDI IN SUPPORT
THEREOF**

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I. INTRODUCTION

Pursuant to this Court’s Order following hearing on the Order To Show Cause dated January 30, 2019, attorneys Frank M. Pitre (“Pitre”) and Steven M. Campora (“Campora”), hereby file their written submission in support of their brief comments during the hearing. The purpose of this submission is to address specific deficiencies in PG&E’s risk management practices and corporate governance which the undersigned believe have contributed to an increased risk of catastrophic wildfires in recent years. The hope is that a better understanding of the factors that have contributed to the increased risk, from those who have served adversarial roles in representing the victims of these tragedies, will provide a framework for implementing short and long-term policies, practices and procedures to prevent any reoccurrence. Attorneys Pitre and Campora wish to acknowledge the assistance from the law firms of Walkup, Melodia, Kelly & Schoenberger and Corey, Luzaich, De Ghetaldi & Riddle, LLP in preparing this submission.

II. PG&E ACCEPTS A HIGH RISK OF WILDFIRES IN ITS ELECTRICAL OPERATIONS AND CAUSES SIGNIFICANTLY MORE WILDFIRES THAN OTHER COMPARABLE UTILITIES.

Every three years, PG&E submits to the CPUC the General Rate Case, a proposal for funding its core gas and electric operations. As part of its rate case for the period 2017 to 2019, PG&E submitted written testimony – GRC-050115-PGE-Safety-Assessment-Testimony. Part of the submission was the written testimony of Janaize Markland. At the time, Ms. Markland was the Director of PG&E’s Enterprise and Operational Risk and Insurance Department. (See Campora Decl., Exhibit A). Ms. Markland’s testimony stated in pertinent part:

Risk cannot be completely driven out of PG&E’s—or any—business. Today, risk tolerance is implicitly defined by the resources allocated to manage specific risks. For example, PG&E has a robust program to manage Wildfire Risk that consists of an award-winning vegetation management program, equipment retrofits in high-risk areas, and enhanced inspections. **As a result, tree-related outages are in the neighborhood of 17 per 1,000 miles, <0.02 percent of trees in contact,** and there are a small number of wildfires caused by PG&E equipment each year. **It may be possible to drive tree-related outages to less than 17 per 1,000 miles, or to have less than 0.02 percent of trees in contact, but that would require a level of investment greater than what PG&E is making today.** With limited resources—PG&E cannot do everything and must decide at what point it is okay not to mitigate the risk further—tradeoff decisions must be made.

(Campora Decl., Exhibit A [Exhibit 2034 - Written Testimony of Janaize Markland]).

During the course of discovery in the State Court actions, PG&E has at various times identified the number of miles of its distribution line as anywhere between 81,000 miles and 115,000 miles. (See Campora Decl., Exhibit B.) This means that PG&E was accepting trees on its lines would cause between 1,377 to 1,955 outages per year. In 2016, PG&E actually had 3,299 transmission and distribution “wires down” (outages). According to PG&E, this total number was exacerbated by “full tree failures.” (See Campora Decl., Exhibit C.)

In 2015, PG&E electrical equipment caused 435 fires, including the Butte Fire which burned 70,868 acres, destroyed 549 homes, and killed two people. (See Campora Decl., Exhibit D.) In 2016, PG&E reported 362 wildfires caused by its equipment. In 2017, that number was 501. (See Pitre Decl., Exhibit A [CPUC Fire Incident Data submitted by PG&E, SoCalEd, and SDG&E for 2014-2017]). As of 2017, PG&E’s own data predicted its equipment would cause “1 to 2 large fires per year (300 acres or greater).” (See Campora Decl., Exhibit C.)

Although PG&E claims that there are only “a small number of wildfires caused by PG&E equipment each year,” the data reflects a much different story; especially when PG&E’s numbers are compared to the number of wildfires caused by Southern California Edison (“SoCalEd”) -- a comparable utility to PG&E. (Campora Decl., Exhibit A). SoCalEd serves 15 million people across approximately 50,000 square-miles, operating and maintaining 91,375 miles of distribution lines and 1,433,336 electric poles.¹ In comparison, PG&E services approximately 16 million people throughout a 70,000-square-mile service area, operating and maintaining between 81,000 miles and 115,000 miles of distribution lines and 2,400,000 electric poles.²

Despite the similarities in service size and miles of distribution lines, PG&E’s electrical equipment caused 1,208 more wildfires than SoCalEd’s equipment between 2014 to 2017 – as self-reported to the CPUC by the utilities. **In total, PG&E’s equipment caused 1552 wildfires. While SoCalEd only caused 344 fires over the same time period. This means PG&E’s equipment caused 4.5 times more wildfires than SoCalEd.** (See Pitre Decl., Exhibit A [CPUC Fire Incident Data submitted by PG&E, SoCalEd, and SDG&E for 2014-2017]).

¹ <https://www.sce.com/about-us/who-we-are>.

² <https://www.pgecurrents.com/2017/11/08/facts-about-pge-pole-management-and-maintenance/>.

PG&E's equipment was also responsible for more fires of large scale, including 43 more fires than SoCalEd that burned between 10-99 acres, 3 more between 100-299 acres, and 2 more between 300-999 acres. (Id.). "CALFIRE data shows ~5% to 10% of large fires become catastrophic fires (P95 events)." (See Campora Decl., Exhibit C.)

What is more troubling is that PG&E's numbers do not include the North Bay Fires, as PG&E admitted to this Court that it did not include those fires in its submission of 2017 Fire Incident Data to the CPUC. (See document 971, Case No. 14-CR-00175-WHA, "Response to Request for Clarification", pg. 2 ["Fire incidents that apparently occurred as part of the October 2017 Northern California Wildfires have been excluded from this report where the cause of the ignition is under investigation or may be disputed."]).

While PG&E may not be able to mitigate all risk, it should be able to at least keep pace with its counter-part SoCalEd, which serves more extreme wildfire prone areas. Roughly a quarter of SoCalEd's service territory is categorized as a high fire risk area.³ (See also Pitre Decl., Exhibit B [Utility Service Territories Overlaid onto CPUC Fire Map]).

III. IT IS WELL-UNDERSTOOD THAT UTILITY CAUSED WILDFIRES OCCUR IN PREDICTABLE LOCATIONS, DURING EXTREME HIGH WIND EVENTS, AND ARE PRIMARILY CAUSED BY TREE FAILURES

A. High Wildfire-Prone Areas Are Identifiable Based On Fire History, Vegetation And Topography

First, it is important to note that "[l]arge wildfires are not new to California's landscape." (See Pitre Decl., Exhibit C, pg. 1). CAL FIRE statistics dating back to 1933 confirm that the number of wildfires and the acreage burned by those fires is not the "new" normal, but has been occurring for decades. (See Pitre Decl., Exhibit U).

The areas in California at high and/or extreme risk for utility associated wildfires are identifiable and predictable. (See Pitre Decl., Exhibit D [CPUC Press Release, CPUC Approves Statewide Fire-Threat Map, which states: "The map, approved by the CPUC's Safety and Enforcement Division following a public process, delineates areas in the state where there is an elevated risk and an extreme risk (including likelihood and potential impacts on people and

³ <https://www.sce.com/safety/wildfire>.

property) **from utility associated wildfires. The Fire-Threat Map helps prioritize fire hazard areas** to allow for implementation of new fire-safety regulations adopted by the CPUC in December 2017.”]; see also Pitre Decl., Exhibit E [a May 2014 study done at Duke University, Nicholas School of the Environment titled “Quantifying the Economic Risk of Wildfires and Power Lines in San Diego County” revealed “clear spatial patterns in the distribution of [] fire history”].

According to a study by the Department of Environmental Science, Policy and Management at the University of California, Berkeley, titled “Spatial Variation in Extreme Winds Predicts Large Wildfire Locations in Chaparral Ecosystems”, (hereinafter the “Berkeley Study”),

Based on modeled fire weather patterns, we found that large October wildfires consistently occur in locations experiencing higher fire weather severities, compared to distributions from all shrublands available to burn during Santa Ana events (i.e., distributions shifted rightward in Figure 4). Across the chaparral-dominated ecosystems of the region, only about one quarter (~24%) of the area experiences very high fire weather severities (e.g., index > 25) during the wind episodes we examined. Nonetheless, almost half (45%) of the large fires > 500 have occurred in these regions prone to the highest fire weather severities, and the relationship is stronger in terms of area burned (65%).

(Pitre Decl., Exhibit F, pg. 4).

According to a 2018 Study by the National Oceanic Atmospheric Agency and the National Weather Service Storm Prediction Center:

California’s fire history is littered with fast-moving, destructive wildfires adjacent to populated areas. Many wind-driven fires that occur in the coastal ranges of California burn across steep terrain with fuels shaped by a Mediterranean climate during periods of strong foehn winds in early autumn when fuels remain dry prior to the onset of cool-season precipitation. The coincidence of land development in areas prone to wind driven extreme fire weather (i.e., Diablo winds, Santa Ana winds) results in fire-related hazards for a large number of people.

(See Pitre Decl., Exhibit C, pg. 1).

B. Catastrophic Wildfires Are Associated With Extreme High Wind Events

“Across Mediterranean-climate ecosystems – those highly fire-prone regions experiencing cool, wet winters and warm, dry summers – devastating fires are often associated with short episodes of severe fire weather generated by hot and dry winds.” (Pitre Decl., Exhibit F, pg. 1). The Berkeley

1 Study notes that Santa Ana winds in Southern California “have long been linked to large wildfire
2 occurrence,” citing to several academic publications dating back to 1964. (Id.).

3 And the CPUC and CAL FIRE agree, noting that: “[w]ind data is indeed critical for wildfire
4 mitigation and response.” (See Pitre Decl., Exhibit G [CPUC Safety and Enforcement Division
5 Rulemaking 15-05-006 SED-CAL FIRE Joint Assessment and Recommendation Report (Sept. 19,
6 2018)] pg. 2). This is why as of September 2018, the CPUC’s Safety and Enforcement Division
7 (“SED”) along with CAL FIRE recommended:

8 in light of the great potential public benefit of and the current expenditures already
9 underway for deployment of weather stations throughout the HFTD and other high-
10 risk fire areas, **SED and CAL FIRE recommend that, to the extent reasonable, the**
11 **Commission encourage and support utility efforts to install weather stations and**
12 **gather high-quality weather data.** Furthermore, we also recommend the
13 Commission, to the extent reasonable, encourage studies for potential uses of such
14 high-quality weather data to develop and implement operational and predictive tools
15 that enhance utility situational awareness and allow for improved detection and
16 response, thus increasing system resiliency and further growing mitigating wildfire
17 risk.

18 (Id. at 3).

19 **C. Wildfires Are Overwhelmingly Caused By Tree Failures**

20 “Based on a review of existing data and information, [the CPUC Safety and Enforcement
21 Division (“SED”)] and CAL FIRE have concluded that **most utility-caused fire ignitions are due to**
22 **(1) contact with vegetation and (2) failure of conductors.**” (See Pitre Decl., Exhibit G, pg. 2-3).

23 PG&E also reported to the CPUC in March 2018 that **“vegetation contact with conductors”**
24 **was the leading cause of the 486 fire ignitions associated with PG&E facilities during 2015-2016,**
25 **causing 37% of the fires.** (See Pitre Decl., Exhibit H [Risk and Safety Aspects of Risk Assessment
26 and Mitigation Phase Report of PG&E Investigation 17-11-003 (March 30, 2018)], pg. 84).

27 In February 2013, Charles Filmer of Pacific Gas & Electric Company prepared a report based
28 on PG&E Vegetation Management fire investigations, which he testified to receiving 50 to 100 such
investigations per year.⁴ (See Campora Decl., Exhibit E.) Four findings are of particular note.

⁴ Although the report references “ignitions,” Mr. Filmer made it clear in his deposition that, he was referring only to ignitions referenced in Vegetation Management investigative reports for the years 2007 to 2012. He did not know how many vegetation related PG&E fires occurred each year. (See Campora Decl., Exhibit E, Filmer Depositions, pages 44-46.)

- 1 1. **Over 85% of vegetation-related fire incidents involved high-voltage distribution lines and almost 90% of those fires were caused by tree failures;**
- 2
- 3 2. Ignitions are most frequent during the “conventional fire season of “mid-April through October;”
- 4
- 5 3. PG&E was aware that during the May-October time frame, Blue Oak, Valley Oak, and Blue Gum trees suffered branch failures and, **“it could be cost effective fire-risk reduction work to remove overhanging branches of these species in high-risk areas”**; and
- 6
- 7 4. “Gray pine located in high-risk areas that are tall enough to hit the powerlines should be considered for removal or lowering in height to protect facilities.”
- 8

9 **IV. PG&E CAN TAKE TARGETED MEASURES TO MITIGATE AND/OR PREVENT THE RISK**

10 **A. PG&E Can Harden Its Equipment In Wildfire Prone Areas.**

11 After the 2007 wildfires, SDG&E “fire-hardened” its electrical equipment in high fire prone
 12 areas, including **replacement of wooden poles with steel poles and installation of heavier**
 13 **conductors.** (Pitre Decl., Exhibit E, pg. 4). According to SDG&E:

14 Steel poles are generally stronger and thus better able to withstand extreme
 15 wind gusts associated with high fire risk Santa Ana wind conditions. Stronger
 16 steel poles can support a wider spacing of conductors, which, when combined
 17 with heavier conductors, lowers the likelihood of high winds causing contact
 18 between conductors that could result in line faults, sparking, and potential
 19 ignitions of ground vegetation. The installed steel poles are taller than the
 20 wooden poles they replace, so conductors are raised higher above potential
 ground fires which have the potential to damage line insulation or cause
 excessive line sag. Finally, steel poles are more resistant to damage from ground
 fires than wooden poles.

21 (Pitre Decl., Exhibit E, pg. 4, *citing to* San Diego Gas & Electric Company.
 22 (2013). *Application of San Diego Gas & Electric Company for a Permit to*
 23 *Construct The Tie-Line 637 Wood-to-Steel Project (A13-03-003)*. San Diego,
 CA: SDG&E.).

24 **“SDG&E prioritizes the maintenance of poles in each power line in high-risk fire areas**
 25 **according to the existing vegetation and fuel conditions,** the history of high-speed winds, and the
 26 age and condition of existing infrastructure as part of a strategy to strengthen power lines connecting
 27 substations for improved reliability.” (Pitre Decl., Exhibit I [San Diego Gas & Electric Company Tie
 28 Line 649 Wood-to-Steel Replacement Project: Chapter 2 – Project Purpose and Need (Aug. 2015)]
 pg. 2-3).

1 Furthermore,

2 As part of its Community Fire Safety Program, **SDG&E has undertaken one**
 3 **of the largest deployments of state-of-the-art pulse reclosers, focusing**
 4 **heavily on the [High Fire Threat District]**. This equipment allows SDG&E
 5 to operate its system with significantly reduced energy flows during reclosing
 6 operations and be able to sectionalize various elements of its distribution system
 7 to better manage system operations and reliability. ... In addition, SDG&E has
 8 implemented more sensitive relay settings to all SCADA reclosers in the [High
 9 Fire Threat District]. These sensitive relay settings provide very fast clearing of
 10 faults on distribution circuits and are remotely operated via SCADA, allowing
 11 for real-time adjustments triggered by adverse weather conditions.

12 (Pitre Decl., Exhibit J [San Diego Gas & Electric Company Fire Prevention
 13 Plan (Oct. 31, 2018)] pg. 12).

14 **B. PG&E Can Identify and Remove Hazard Trees in Wildfire Prone Areas.**

15 **i. PG&E Is Required by Law to Remove Hazard Trees.**

16 According to PG&E:

17 [Public Resource Code section] 4293 requires a 4-foot clearance be maintained
 18 at all times for power lines between 2,400 and 72,000 volts, and a 10-foot
 19 clearance for conductors 115,000 volts and above. GO 95, Rule 35 also requires
 20 the removal of dead, diseased, defective and dying trees that could fall into the
 21 lines. The clearance requirements increase as the voltage increases. This applies
 22 in the SRA during designated fire season.

23 (See de Ghetaldi Decl., Exhibit 1)

24 In PG&E's parlance, "dead, diseased, defective and dying trees" are known as "hazard" or
 25 "facility protect" trees. The statutory clearance requirements apply whether a tree is a "hazard" tree
 26 or not. As PG&E recognizes, the required clearances must be maintained "at all times". (See de
 27 Ghetaldi Decl., Exhibit 1).

28 The CPUC interprets the statutory requirements in the same way: "It's the LAW. State law
 requires utility companies to maintain specific clearances (depending on voltage running through the
 tine) between electric power lines and all vegetation." (See de Ghetaldi Decl., Exhibit 2).

Public Resources Code § 4293 operates in conjunction with rules and orders promulgated by
 the CPUC. Originally adopted in March 1929, General Order ("GO") 95, Rule 11 provides:

The purpose of these rules is to formulate, for the State of California, requirements for
 overhead line design, construction, and maintenance, the application of which will

1 ensure adequate service and secure safety to persons engaged in the construction,
2 maintenance, operation or use of overhead lines and to the public in general.

3 Thus, one of the citations issued by the CPUC to PG&E for the 2015 Butte Fire was for “One
4 violation of GO 95, Rule 35, for failing to maintain the minimum required clearance between the 12
5 kV conductor and the subject grey pine tree, which lasted for at least one (1) day.” (See de Ghetaldi
6 Decl., Exhibit 3, pp. 1-2.)

7 **ii. As Of June 2017, PG&E Failed To Remove Or Otherwise Trim**
8 **More Than 6000 Hazard Trees Which It Had Identified In 2016.**

9 As of June 7, 2017, there were more than 6000 Facility Protect Trees (FPT), identified by
10 inspectors during “routine patrol” in 2016 which had not been addressed. Of that number, 888 were
11 in the divisions where fires occurred in 2017. (See Campora Decl., Exhibit F [Depo of Biancardi -
12 Exhibit 007-006]).

13 A Facility Protect Tree is a tree which, because of a disease, defect or condition, poses a danger
14 of falling into the line. A green healthy tree can be an FPT tree. (See Campora Decl., Exhibit F [Depo
15 of Biancardi], pgs. 43-55 and Exhibit G [Depo of Tankersley], pgs. 235-236).

16 On October 3, 2017, 5 days before the fires in the North Bay, an email exchange between
17 PG&E employees, read as follows:

18 Employee One: “Looks like we got creamed yesterday in North Bay assuming
19 due to wind. Luckily no Wires Down on any of the outages.”

20 Employee Two: “We did. Unfortunately, a line clearance job was cancelled
21 today because there were no available PG&E line crews.”

22 Employee One: “2016 work?”

23 Employee Two: “Yes, expired units⁵.”

24 (Campora Decl., Exhibit F [Depo of Biancardi - Exhibit 0070-007]).

25 PG&E did not complete this work despite admitting that it knew FPT trees posed the risk of
26 death to the public.

27 Q. And PG&E knew, in October of 2017, that an FPT tree could come down,
28 cause a fire that could kill people, true?

A. That’s correct.

(See Campora Decl., Exhibit F [Depo of Biancardi] pg. 81:5-8.)

⁵ An “expired unit” is a tree schedule for work, which “has gone past one year.” (See Campora Declaration, Exhibit C.)

1 iii. **PG&E Officers Ignored Audit Results Showing “Statistically**
 2 **Significant Sample” Of Hazard Trees Near Powerlines Were**
 3 **Missed by Tree Inspectors**

4 In 2016, PG&E auditors inspected 1,539 miles of line in SRA. In that distance they evaluated
 5 102,502 trees and identified 3,603 FPT trees. 0.035% of the trees its auditors inspected posed a danger
 6 to its lines. (See Campora Decl., Exhibit H [Depo of Oldford - Exhibit 0052-006]). Despite finding
 7 *that after its Pre-Inspectors and Tree Trimmers had done their work*, more than 3 trees out of 100
 8 still posed a risk to its lines. PG&E chose not to extrapolate its “statistically significant sample.” (See
 9 Campora Decl., Exhibit H [Depo of Oldford], pgs. 78-79, 85-90, and 128-129).

10 iv. **PG&E Ignored Lessons from the 2015 Butte Fire Which**
 11 **Evidenced Clear Failures by Its Vegetation Management**
 12 **Contractors to Perform Their Job Duties Responsibly and**
 13 **Adequately**

14 First and foremost, it is important to note that PG&E contracts out all of its vegetation
 15 management responsibilities, including tree inspections, tree removals, and LiDAR. From depositions
 16 in the Butte Fire case, it is apparent the **employees of the tree inspection and removal companies**
 17 **are not sufficiently trained, experienced, or knowledgeable about their job responsibilities.**

18 In 2014-2015, PG&E used foot patrols to inspect its distribution circuits. In October 2014, an
 19 employee of a company PG&E used to conduct inspections marked two “edge trees” near the Electra
 20 1101 circuit in southern Amador County. The inspector did not mark for removal a top heavy 44-foot
 21 grey pine that was being supported by the edge trees the inspector marked for removal. **The inspector**
 22 **admitted to not using any measuring device to determine the height of the tree or its distance**
 23 **from the power lines, nor did the inspector walk around the grey pine to inspect whether it was**
 24 **diseased or dying.**

25 In January 2015, employees of another company that contracted with PG&E removed the two
 26 edge trees supporting the grey pine. Over the next nine months, the grey pine leaned further and
 27 further over toward the sun in the direction of the power lines.

28 **In July 2015, PG&E hired a tree inspection contractor who used uncertified and**
unqualified persons to conduct vegetation management inspections. The three men sent to
 conduct the supplemental CEMA foot patrol inspection of the Electra 1101 circuit were a Walmart

greeter, a dog catcher, and a man who had worked in a plant nursery. When asked at their depositions, none of the three could recall patrolling the Electra 1101 circuit.

PG&E started using LiDAR (“Light-detecting and Ranging”) remote sensing technology on a limited scale in 2014 to help identify hazard trees near high voltage lines. In 2015, PG&E contracted with Quantum Spatial to obtain LiDAR scans of 9,547 miles of its distribution system and orthoimagery of 15,320 miles of its distribution system, including the portion of the Electra 1101 circuit where the Butte Fire started. The “deliverables” included: (a) the use of hyperspectral data processing to identify individual grey pine and black oak trees; (b) graphic identification of individual grey pine and black oak “risk trees” with “tree polygons”; and (c) a “fall-in analysis” to identify trees with the potential to strike conductors.

Aerial surveys of the selected circuits in high fire risk areas began in July 2105 and delivery of the results was scheduled for October 31, 2015--only weeks after the Butte Fire ignited. The orthoimagery results identify the grey pine that hit the line as a hazard tree with the potential to strike the line. (de Ghetaldi Decl., Exhibit 4 and 5).

Manipulation of the July 2015 “point cloud” data shows the grey pine leaning toward and within six feet of the circuit, demonstrating the incompetence of the July 2015 foot patrol inspectors who failed to identify the grey pine as in violation of Public Resources Code § 4293. (de Ghetaldi Decl., Exhibits 5 and 6).

C. PG&E Can Develop Ways to Monitor Local Conditions in Wildfire Prone Areas

After the 2007 wildfires, SDG&E significantly increased its ability to monitor local conditions and assess those conditions for fire risk. **SDG&E installed 167 anemometers, or wind measuring devices. It hired three meteorologists “who provide operational weather information” and “four experienced fire professionals who provide advice about fire risk and mitigation.”** (Pitre Decl., Exhibit I, pg. 2-1).

According to the CPUC and CAL FIRE, these efforts have been successful: “[the CPUC Safety and Enforcement Division] and CAL FIRE have evaluated the benefits achieved by San Diego Gas & Electric (SDG&E) through the use and implementation of information learned from its network of weather stations and concluded that it provides substantial benefit to wildfire risk mitigation, system

1 planning and hardening, operational awareness and emergency response.” (See Pitre Decl., Exhibit G,
2 pg. 2).

3 Regrettably, it was not until after the North Bay Fires that PG&E announced it would
4 install around 200 new weather stations in its service territory that would feed real-time weather
5 data to a wildfire safety team that would interpret the data relative to wildfire risk. But PG&E did
6 not plan to complete the installation of the new weather stations until “the end of the year”, i.e.
7 after the Camp Fire hit.⁶ However, PG&E certainly understood, and has understood historically, the
8 importance of local weather conditions in assessing fire danger, as Kevin Dasso, PG&E Vice President
9 of Electric Asset Management in July 2018 stated:

10 We saw first-hand last year how extreme weather events driven by climate
11 change are causing unprecedented and unanticipated wildfires. Adding new
12 weather stations in high fire-threat areas across our service area enhances our
13 weather forecasting and modeling to help bolster wildfire prevention and
14 response efforts and keep our customers safe.

15 ...

16 PG&E has historically used weather forecast data for many purposes, mainly
17 for predicting storm damage and for assessing fire danger. Its team of
18 meteorologists, which includes fire-weather specialists, performs daily
19 monitoring of current and forecast weather patterns and fire threat projections
20 using in-house and publicly available data from the National Weather Service,
21 CAL FIRE, US Forest Service and more. This information helps PG&E predict
22 when and where the fire threat will be high or extreme so additional steps can
23 be taken to keep critical infrastructure, utility crews and communities safe.

24 With these new weather stations, PG&E will be able to capture additional real-
25 time data related to temperature, wind speeds and humidity levels to provide
26 improved awareness of current fire danger conditions. PG&E's meteorologists
27 will feed information to the company's new Wildfire Safety Operations Center
28 team to review data and determine any needed action to help reduce wildfire
risks.⁷

29 **D. PG&E Can De-Energize Lines In Wildfire Prone Areas When Local Conditions**
30 **Indicate an Extreme Risk for a Catastrophic Wildfire.**

31 **i. In 2008, SDG&E Began Shutting Off Power to Protect Public**
32 **Safety**

33 In October 2007, Santa Ana winds caused SDG&E's overhead power lines to ignite the Witch
34 Fire, the Guejito Fire, and the Rice Fire. (Pitre Decl., Exhibit N, CPUC Decision 09-09-030 at pg 24).

35 ⁶ https://www.pge.com/en/about/newsroom/newsdetails/index.page?title=20180716_pge_adds_over_50_new_weather_stations_to_advance_forecasting_abilities_better_predict_extreme_weather_and_wildfire_potential.

36 ⁷ Id.

1 Together, those fires burned more than 200,000 acres and 1,800 buildings and killed two people. (Id.)

2 A year later, in December of 2008, SDG&E submitted an Emergency Power Shut-Off Plan for
3 review by the CPUC. SDG&E sought permission to turn off electricity during periods of extreme fire
4 danger in order to prevent its overhead power lines from igniting potentially catastrophic wildfires.
5 (Pitre Decl. Exhibit N [Decision 09-09-030] pgs. 3-4).

6 Although the CPUC rejected SDG&E's plan at that time, the CPUC made clear that it believed
7 all utilities were presently legally obligated to de-energize lines that would present a safety risk under
8 extreme weather conditions pursuant to Public Utility Code Section 451 and 399.⁸ (Id. at pg 61).

9 SDG&E's statutory obligation to operate its system safely requires SDG&E to
10 shut off its system if doing so is necessary to protect public safety. For example,
11 there is no dispute that SDG&E may need to shut off power in order to protect
12 public safety if Santa Ana winds exceed the design limits for SDG&E's system
and threaten to topple power lines onto tinder dry brush.
(Id. at pgs 61-62)

13 **ii. Investor Owned Utilities were Notified by the CPUC that they**
14 **Could Include Proactive De-energization as Part of Their Fire**
15 **Prevention Plans Five Years Before the 2017 North Bay Fires**

16 In 2012, the CPUC revisited its decision to deny SDG&E's plan, clarifying that it should not
17 have been interpreted as an outright rejection of the option of shutting off power to prevent fires. (Pitre
18 Decl. Exhibit O [Decision 12-01-032] pg. 53). The Commission explained that a utility could include
19 de-energization as part of its fire-prevention plan but must first file an application for authority to do
20 so. (Id. at 51). "The application shall demonstrate with a cost-benefit analysis developed in accordance
21 with the guidance provided by D.09-09-030 that the benefits of shutting off power in terms of a net
22 reduction in wildfire ignitions outweigh the substantial costs, burdens, and risks that shutting off power
23 would impose on customers and communities affected by the shut off. The application must also
24 include mitigation measures to reduce or eliminate the inevitable adverse impacts caused by shutting
25 off power." (Id. at 51-52; *see also* Ordering Paragraph 6 at pg 175).

26 ⁸ The Commission noted that in 2003 SCE implemented a temporary program to shut off power to rural areas to protect
27 against the possibility of strong winds causing dead trees to fall onto its power lines and igniting a wildfire. (Pitre Decl.
28 Exhibit N [Decision 09-09-030] pg. 40). SCE did not wait for the CPUC's permission to initiate the program. (Id.) It put
the program in place then got the CPUC's blessing later. (Id.). During the time SCE's power shut-off program was in
effect, SCE shut off power one time. (Id. at 41). When SCE inspected its power lines prior to re-energization, it found six
locations where trees had fallen onto the lines. (Id.). SCE credited the de-energization with preventing a catastrophic
wildfire. (Id. at 41).

1 **Approximately four months later, the CPUC issued a decision authorizing SDG&E to**
 2 **proactively shut off power in emergency situations when necessary to protect public safety.** (Pitre
 3 Decl. Exhibit P [Decision 12-04-024] pg. 35).

4 **Since 2014, SDG&E's electrical equipment has only caused 109 wildfires with only ONE**
 5 **wildfire being over 10 acres, and even that fire was contained before it reached 300 acres.** (See
 6 Pitre Decl., Exhibit A [CPUC Fire Incident Data submitted by PG&E, SoCalEd, and SDG&E for
 7 2014-2017]). **Compare that to PG&E who caused 1552 wildfires during the same timeframe**
 8 **with 68 of those fires burning over 10 acres.** (Id.)

9 **iii. The CPUC Outlined Basic Factors for SDG&E to Consider Prior**
 10 **to De-energization and Ordered SDG&E to Submit A Report**
 11 **Each Time It Shut Off Power to Prevent A Wildfire**

12 In its decision authorizing SDG&E to proactively de-energize power lines, the CPUC made
 13 clear that the utility should first deploy other measures as an alternative to shutting off power. **"These**
 14 **measures include reliance on sensitive relay settings to shut off power in milliseconds if there is**
 15 **an electrical failure caused by power lines falling to the ground and disabling reclosers to keep**
 16 **power off until SDG&E can inspect its facilities** to determine if it is safe to re-energize its power
 17 lines." (Pitre Decl. Exhibit P [Decision 12-04-024] pgs. 30-31).

18 SDG&E thereafter submitted a 39-page Fire Prevention Plan to the CPUC that provided "a
 19 comprehensive inventory of the organizational and operational activities SDG&E undertakes in order
 20 to address the risk of fire in the SDG&E service territory." (Pitre Decl. Exhibit Q [Attachment A to
 21 SDG&E Supplemental Advice Letter 2429-E-A 6/3/13 Fire Prevention Plan] pg. 4).

22 With respect to de-energization, SDG&E explained that **when the National Weather Service**
 23 **declared a Red Flag Warning, the utility would activate its Emergency Operations Center** – "a
 24 secure and dedicated facility which serves as a command center for SDG&E operations under high-
 25 threat conditions." (Pitre Decl. Exhibit Q [Attachment A to SDG&E Supplemental Advice Letter
 26 2429-E-A 6/3/13 Fire Prevention Plan] pg. 27). That triggering event would also require certain senior
 27 managers and operating personnel to report to the Emergency Operations Center. (Id. at pg 27). **Those**
 28 **persons would then closely monitor the electrical system and, if necessary, shut off power "in**

order to protect the public safety and defend against the threat that SDG&E's electrical facilities will become a source of ignition." (Id. at pg 27).

iv. PG&E Resisted the Notion of Utilizing De-energization to Prevent Wildfires Until After the North Bay Fires

PG&E did not follow SDG&E's lead and implement a comprehensive approach to prevent wildfires. After the October 2017 fires erupted, the CPUC asked the following question as part of its post-fire investigation:

Some utilities, for example SDG&E, have procedures in place to proactively de-energize power lines when weather conditions indicate extremely high risks of fires (based on temperature, humidity, wind-speed and other factors). Does PG&E have similar procedures in place?

(Pitre Decl. Exhibit R [10/17/17 PG&E Response to Safety and Enforcement Division Question No. 5])

PG&E replied, in pertinent part: "PG&E does not have a procedure to de-energize power lines and thereby disable power service to its customers in advance of weather conditions that indicate extreme fire risk." (Pitre Decl. Exhibit R [10/17/17 PG&E Response to Safety and Enforcement Division Question No. 5])

In response to the 2017 North Bay Fires, PG&E created a Community Wildfire Safety Program. (Pitre Decl. Exhibit S [Sept. 2018 PG&E Public Safety Power Shutoff Policies and Procedures] pg. 1) One component of that program was the "Public Safety Power Shutoff" – PG&E's "policies and procedures related to proactively turning off power for safety – and later restoring power – when necessary due to extreme weather and wildfire danger." (Id.)

v. In the Days and Hours Leading Up to the Camp Fire, PG&E Notified Paradise That It Was Considering De-Energization, But Never Turned the Power Off

PG&E was aware in advance of the Camp Fire of the extreme fire danger presented by weather conditions on November 8, 2018. Two days earlier, on November 6, PG&E activated its Emergency Operations Center (EOC) "due to forecasted weather conditions with increasing fire risk." (Pitre Decl., Exhibit K [PG&E 11/2/7/2018 ESRB-8 Compliance Report for Potential Proactive De-energization]). PG&E then began notifying customers that it might be shutting down power in certain Northern

1 California counties, including Butte County, on November 8 due to forecasted high winds and low
2 humidity.

3 PG&E followed up with 17 additional warnings over the next two days advising that it was
4 going to shut off power on the morning of November 8. PG&E's warnings referenced forecasts of
5 sustained winds of 20 to 30 miles per hour, with gusts of 40 to 50 mph overnight Wednesday into
6 Thursday and lasting until late afternoon.⁹

7 **At 7:56 a.m. on the morning of November 8 - over an hour after the Camp Fire had**
8 **already started - PG&E was still reporting that it may be shutting off power due to the "potential**
9 **extreme fire danger". Unfortunately, PG&E never did turn off the power and 86 people died.**

10 V. INDEPENDENT ANALYSIS CONTINUES TO CONFIRM THAT PG&E'S SAFETY 11 CULTURE AND GOVERNANCE ARE LACKING

12 One of the criticisms arising out of the investigations conducted by the CPUC in the aftermath
13 of the San Bruno Fire & Explosion of September 9, 2010, was a concern that PG&E lacked a robust
14 risk management process and safety culture.

15 Indeed, one senior official of PG&E who left after the San Bruno disaster revealed in a
16 deposition that PG&E realized by the Spring of 2007 that it needed to "shift culture", develop greater
17 "operational discipline" and "build an integrity from top to bottom of the organization." (See Pitre
18 Decl., Exhibit T [Depo of Salas] pg. 26-28). When that same official reviewed PG&E's Enterprise
19 Risk Management Program for Energy Delivery and Engineering and Operations shortly after joining
20 PG&E in May of 2007, he concluded: the program seemed "unactionable because almost everything
21 is broken."... "need to triage". Presciently, he concluded that: **"PG&E lacks a well defined**
22 **documented risk policy/standard at the enterprise level. That one explains PG&E's overall risk**
23 **assessment methodology; defines the lines of business roles and responsibility; specifies the**
24 **requirements for performing and documenting risks; links risk assessments to controls, self-**
25 **assessment, reviews and audits; and specifies the requirements for metrics to track the risks."**
26 (See Pitre Decl., Exhibit T [Depo of Salas] pg. 71-78). These problems persist to this very day.

27
28 ⁹ <https://www.mercurynews.com/2018/11/09/pge-power-lines-may-have-sparked-deadly-buttecounty-wildfire-according-to-radio-transmissions/>.

Following the 2010 San Bruno explosion, the CPUC formed an Independent Review Panel (IRP) of experts. The IRP issued a report in 2011 faulting PG&E for a “dysfunctional culture,” in which the goals of its enterprise risk management process were disconnected from the reality, decisions, and actions throughout the company. (See Pitre Decl. Exhibit L [2011 Report of Independent Review Panel] pg. 17 and Exhibit M [Northstar Report: Assessment of PG&E’s Safety Culture (May 8, 2017)] pg. I-2.)

The IRP made several key findings when it came to corporate management and vision:

- PG&E “did not make the connection between its high level goals, its enterprise risk management process, and the work that was actually going on in the company.” (Pitre Decl., Exhibit L, pgs. 16-17.)
- “Simply put, ‘the rubber did not meet the road’ when it came to PG&E’s implementation of the recommendations of its enterprise risk management process.” (Id. at 16.)
- “the culture of the company – a culture whose rhetoric does not match its practices.” (Id. at 17.)
- “the large presence of telecommunications, legal and finance executives in top leadership positions, and the under representation of engineers and professionals with significant operating experience in the natural gas utility industry have impaired the effectiveness of the organization.” (Id.)
- “there appears to be an elevated concern about the company’s image that may get in the way of concentrating resources on the most important things.” (Id.).
- “top management may be overly focused on financial performance.” (Id. at p. 18, fn 17.)

Despite these findings, PG&E did little to make changes to address the problems identified. On May 8, 2017, NorthStar Consulting Group issued a report to the CPUC on its assessment of PG&E’s safety culture, which included the following findings and conclusions:

1. “**Current safety culture efforts are disjointed** and not part of a comprehensive, company-wide health and safety plan.” (See Pitre Decl. Exhibit M, pg. I-8.)
2. “There is **insufficient company-wide communication** regarding PG&E’s safety culture strategy.” (Id.)
3. “Prior to 2012, there was no executive officer in charge of safety. The Corporate Safety Officer until March 1, 2017, started employment with PG&E in 2007. He held positions in Finance, moved to Vice President of Shared Services and then SVP of S&SS. He was named Corporate Safety Officer in 2012. **He had no prior experience managing safety functions.**” (Id. at IV-13.)

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4. “Until recently, senior leaders in Corporate Safety had little or no previous experience in utility operations and no direct safety management experience. **Overall, individuals responsible for PG&E’s various safety functions and organizations lacked “safety” credentials.**” (Id. at IV-18.)
5. “Despite the significance of San Bruno and the IRP findings, there were no major changes to the composition of the Independent Directors of the BODs. It was not until 2012, that the BOD added additional utility operational expertise, **and its safety expertise remains limited.**” (Id. at III-7)
6. **“One thing that has not changed since the IRP report is that Board members appear to define their role as approving programs presented by management, rather than leading the effort to improve the safety culture at the company.”** (Id. at III-14).

VI. SUMMARY RECOMMENDATIONS

SHORT TERM

1. Immediate adoption of SDG&E’s policies, practices and procedures for de-energizing conductors during prescribed high wind and high fire danger conditions;
2. Immediate Concentration of inspections, tree removal and trimming focused on Tier 3 – Extreme areas identified in the CPUC Fire-Threat Map.
3. Facility Protection Trees: Any prior ambiguity over clearing of hazard trees near lines must be clarified to specifically include over-hanging branches.

LONG TERM

1. Evaluation and re-structure of the process used to assess and manage wildfire risk;
2. Adoption of a mandatory process for training and certification of individuals assigned to identify trees that pose a hazard to electrical conductors, in addition to required continuing education and re-certification of inspectors every three years.
3. Facility Protection Trees: Prohibition against Facility Protection Work being carried over from year to year.
4. Establishing budgets and timetables for burying lines underground or insulating lines in areas of higher fire danger.

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- 1 5. Corporate Governance: Creation of a wildfire safety and risk management committee
2 composed of three qualified process safety and risk management officers. The
3 committee should be established to operate independently from officers responsible for
4 day-to-day vegetation management and wildfire risk mitigation duties. This committee
5 must have the authority to obtain information from officers, managers, and staff
6 responsible for vegetation management and wildfire risk assessments, and be
 empowered to audit and evaluate performance against targeted goals. The committee
 must be vested with the ability to make recommendations to the Board of Directors for
 safety related improvements and funding necessary for the elimination of wildfire risks.

7 Dated: February 6, 2019

COTCHETT, PITRE & McCARTHY, LLP

8
9 By:  _____

FRANK M. PITRE

10
11
12 Dated: February 6, 2019

**DREYER BABICH BUCCOLA WOOD
CAMPORA, LLP**

13
14
15 By:  _____

STEVEN M. CAMPORA